Project Name: **Avery Landing Site Engineering Evaluation** ***Project #:*** **073-93312-02**

Location of Project The Site is located along State Highway 5 about 0.75 mile west of the town of Avery, Idaho ***Date prepared:*** **9/26/08, Rev 1/23/09**

Site Description: This Engineering Evaluation will collect, develop, and evaluate sufficient information regarding the Site to recommend an appropriate removal action. Field activities will include:

- A characterization of the nature, extent, and potential sources of contamination at the Site
- An assessment of the groundwater and surface water impacts from the Site contamination
- An evaluation of the potential routes of exposure and risks to human and ecological receptors associated with contamination at the site

This section provides a description of Golder's proposed field investigations for better understanding the nature and extent of COPCs and potential Site risks. The HASP information for field investigations specific for the Treatability Study, Biological Assessment, and Cultural Resources will be addressed in addendums to this HASP.

- Additional Monitoring Well Installation
- Groundwater Hydraulic Gradient Investigation
- Groundwater Sampling
- Groundwater Pump Tests
- Near Shore Floating LNAPL and Surface Water Sampling

Project Manager: **Douglas Morell** ***signature*** ***Date:*** _____

Office Health & Safety Coordinator **Jane Mills** ***Signature*** ***Date:*** _____

EMERGENCY ACTION PLAN

Emergency Contact & Services

Title	*Name*	*Contact #'s*
Site Safety Officer	TBD	(208) 755-3002
First Aid/CPR	TBD	(208) 755-3002
Project Manager	Douglas Morell	(425)351-7451
Office H&S Coordinator	Jane Mills	(206)295-7002
Client Contact		

Title	*Name*	*Contact #'s*
Hospital	Benewah Community Hospital	(208) 245-5551
Fire Dept.	Fire Departments & Districts Wallace Idaho 83873	208-752-1101
Ambulance		
Golder Corporate Safety Officer	Charlie Haury	904-607-6057 cell

How to Contact First Aid

1. Method of Communication: 911
2. Channel or phone number to be used N;/A
3. Name of person(s) providing First Aid Golder on-site staff

Location of First Aid: 1st Aid kit will be maintained in the Golder project vehicle

Nearest Telephone if outside assistance is required: Residential properties located adjacent to the west of the site.

Fire / Explosion or other Emergencies Requiring Evacuation:

In the event of a fire or explosion, if the situation can be readily controlled with available resources without jeopardizing your health and safety or the health and safety of the public, or other site personnel, take immediate action to do so, otherwise:

1. Notify emergency personnel by calling 911
2. If possible, isolate the fire to prevent spreading.
3. Evacuate the area.
4. Assemble at Muster Station — ***Muster Station Location*:** On the road along Highway 5
5. Perform head count to ensure complete evacuation
6. Inform Emergency Personnel of any missing team members

Golder personnel and all subcontractors will have a fire extinguisher inside of their respective field vehicles at all times while working onsite.

On Site Injury or Illness:

In the event of an injury requiring more than minor first aid, or any employee reporting symptom(s) of illness, or exposure to hazardous substances, immediately take the victim to:

Benewah Community Hospital • 229 South 7th Street • St. Maries, ID 83861 • (208) 245-5551

Benewah Community Hospital's Emergency Room is fully physician staffed, 24 hours a day, 7 days a week, with medical services available to handle a full range of serious injuries and illnesses. Board Certified emergency physicians and nurses, specially trained in critical care and emergency life saving with Advanced Life Support training in trauma, cardiac and pediatrics, staff our ER. Other physicians, well-trained nurses, and technologists, round out the ER team. If, after initial examination and stabilization, it is determined to be in the best interest of the patient, the hospital's life flight partner, Med Star, transports patients via helicopter to one of three major trauma hospitals within a 60 mile radius.

The Benewah hospital is located 47 miles and approximately 1 hour drive west of the site.

Driving directions to Benewah Community Hospital:

1. Turn **left** at **NFD 50 Rd/St Joe River Rd** (44 miles)
2. Turn **left** at **ID-3**
3. Continue on **S 3rd St**
4. Turn **right** at **W Jefferson Ave**
5. Turn **right** at **S 7th St**

PRE – DEPARTURE

IMPORTANT THINGS TO CHECK & REMEMBER

1. Look at the bottom of this page, and ensure that your Project Manager and Office Health & Safety Coordinator have approved this HASP.
2. Ensure that your Project Manager has discussed in detail this HASP, gone through the Hazard Assessment with you and explained the hazards associated with the work that you will be performing.
3. Ensure that you have all the required PPE and are trained in the areas which are indicated in this HASP.
4. Familiarize yourself with the Emergency Action Plan for the site prior to site arrival.
5. Check the weather in the immediate area of the project site to ensure that the current weather conditions do not create additional hazards that have not been evaluated.
6. Inquire about cell phone coverage (satellite phones may be the ONLY option in some locations) and physically test all of your means of communication to ensure that they function, and you are familiar with the controls.
7. If you are going to a site where activities are in progress, do not begin work until you have been given an orientation from the Site Safety Officer and have reviewed the site's Health & Safety Manual.
8. **You have the right to refuse any work that you feel is unsafe, or that you are not trained to do. Please discuss your concerns immediately with the project manager and office HSC.**

FIELDWORK HEALTH & SAFETY PLAN

Project Personnel							
Team Member	Function	Cell Ph. #	Other cont. #	Allergies	Emergency Contact		Init.*
					Name	Phone #	
**	**	**	**	**	**	**	**
	Contact Person			N/A	N/A	N/A	N/A

***All Golder Project Personnel must initial in this column beside their name to indicate that they have read & understood the project Health & Safety Plan**

**** Specific Golder Project Personnel information will be added prior to the initiation of on-site project activities.**

Special Instructions

1.	Must determine additional H&S requirements from Site Personnel prior to starting work.
2.	*[Information to be added as identified]*
3.	
4.	
5.	

HAZARD ASSESSMENT

Date: 9/26/08 Rev 1/23/09 **Assessment Performed By:** Jane Mills/Douglas Morell

Location: Avery, Idaho

Description Of Site : The site is a former railroad maintenance yard.

Work To Be Done: Please review detail below.

Excavations for Soil Bulk Sample Acquisitions

The soil investigation will focus on evaluation of the soil in 3 to 4 locations across the Site. The investigation will be conducted with an excavator removing soils to a depth of approximately 8' to 15' below ground surface. Golder will collect soil samples from the excavator bucket as they are retrieved by the excavating equipment. At no time will any Golder employee or subcontractor employee enter the excavation. Each excavation location will be re-filled once sampling is complete, and the excavation soils will be compacted with the excavator bucket.

Additional Monitoring Well Installation

The groundwater investigation will focus on the groundwater directly beneath the Site. A number of monitoring wells installed by EPA and Potlatch currently exist on the Site. During the investigation, one additional monitoring well (designated GA-1) will be installed between the St. Joe River and the existing monitoring well HC-1R. After monitoring well GA-1 installation is complete, the well will be surveyed for x, y, and z coordinates using the same datum used for the other existing Site wells.

Groundwater Hydraulic Gradient Investigation

To better understand the flow of groundwater at the Site, monitoring wells will be monitored for groundwater levels (elevations) changes. The water levels in the wells will be monitored monthly, depending on weather conditions for access. A temporary staging station will be installed near the Site on the St. Joe River for measurements of river water levels. The up-stream bridge at Avery, Idaho may be used to establish a temporary river stage station if one does not exist in the area.

Groundwater Sampling

Two groundwater sampling events are proposed confirm analytical results. Each well will be inspected for the presence of a floating LNAPL and where present its thickness will be estimated. A sample of the floating LNAPL will be obtained from two monitoring wells, MW-11 and HC-4, which historically had significant thickness of the floating LNAPL. The LNAPL form these wells will be analyzed for the list of COPCs.

The groundwater samples will be obtained in a manner that will reduce entrained settleable soils particles and LNAPL carry-down. Two samples will be obtained from each well for metal analyses with one being inline filtered prior to preservation. The results will be used to evaluate whether additional wells are needed in a Phase II investigation. Wells will be surveyed and water-level elevations measured on the same day and prior to any groundwater purging or sampling.

Groundwater Pump Tests

Short–term slug tests will be performed on 4 selected monitoring wells. The selection of wells for slug-testing will be based on well installation documentation, field inspections, and aerial representativeness.

Near Shore Floating LNAPL and Surface Water Sampling

The St. Joe River water will be sampled along the river embankment to assess discharges and impacts from the Site. Two sampling events will be conducted that coincide with the two groundwater sampling events. River station RS-1 will represent up-river background for comparison to river stations RS-2 through RS-5. At each river station, samples of any floating product (except at RS-1) and surface water will be obtained. The samples will be analyzed for the list of COPCs

Hazard		Notes	Necessary Controls	Standard Work Procedure Attached (see appendix)
Travel to site:				
Aircraft	☐			
Helicopter	☐			
Boat	☐			☐Working on or over water
Public or Private Roads/Driving	☒	Golder personnel will drive to and from the project site.	Defensive driving methods will be employed at all times when operating motor vehicles	☒Motor Vehicles and Driving on Company Business
Other	☐			
Site Terrain				
Shafts/Trenches/Slopes	☐			☐Trenching and Shoring
Overhead Hazards	☐			☐Overhead Hazards
Water Hazards	☒	Some surface water sampling will be conducted along the St. Joe river embankment	At no time will the Golder employee collecting the sample enter the water. At all times employees should be aware of the condition of the ground surface at the edge of the water.	☒Working on or over water
Underground Utilities	☒	Utility locate investigations will be conducted prior to drilling the new groundwater monitoring well.	No drilling will be conducted on the site until completion of the utility located can be confirmed, either by observing markings on the ground indicating locations of buried utilities, or direct confirmation with the utility locate	☒Underground Utilities
Confined Space(s)	☐	An additional Plan is required for this hazard- See Appendix		☐Work in Confined Spaces
Slip,Trip / Fall Hazards	☐			☐Slips, Trips and Falls
Other	☐			
Work at Heights				
Ladders/ Scaffolds	☐			
Work Platforms	☐			
Shafts	☐			
General Work Environment				
Heat Stress	☐			☐Heat Stress
Cold Stress	☒	Work may be conducted during the Fall and Winter when temperatures may dip below 50 degrees F	Golder employees will be prepared at all times with sufficient warm clothing and a change of clothes in the event that their clothing becomes wet during a work shift.	☒Cold Stress
Lightening/Tornado/ Hurricane/Severe Weather	☐			☐Inclement Weather
Remote Site	☒	The site is adjacent to a transitory camping ground that does not necessarily have permanent residents. The closest towns are St. Marie's and Wallace, both over one mile away from the site.	Golder personnel will make contact with the Project Manager or Director daily at prescribed times as defined in the Project Site Contact Form included in this HASP.	☐Remote Isolated Surveys
Noise Levels	☒	When mechanical equipment is operating (excavator and drill rig)		☒Hearing Protection
Wild Animal Habitat	☐			☐Biological Exposure Risks
Housekeeping	☐			☐Housekeeping
Poor Lighting	☐			
Extended work hours	☐			
Working Alone	☐			
Proximity to Traffic	☐			☐ Motor Vehicles and Driving on Company Business
Other	☐			
Mechanical Process:				
Unstable Structures	☐			

Moving Parts/Heavy Equipment	☐			☐Working Around Heavy Equipment
Drilling / Pile Driving	☒	Drilling will be conducted during parts of this project	Golder employees will follow the SWP.	☒Drilling
Excavation	☒	Excavation will be conducted during parts of this project	Golder employees will follow the SWP.	☒Trenching and Shoring

Hazard		Notes	Necessary Controls	Standard Work Procedure Attached (see appendix)
Chemical & Biological Contaminants				
Dust	☐			☐Respiratory Protection
Carcinogens	☐			☐ Chemical Exposure Risks** ** fill out table below ☐Respiratory Protection
Radioactive Particles	☐			
Oxygen deficient	☐			
Asbestos	☐			☐Respiratory Protection
Explosive atmosphere	☐			
Mold	☐			
Insects (e.g., ticks)	☒	During the summer months mosquitoes and tics may be a biological hazard at the site.	Insect repellent and proper tick protection measures should be employed during the summer months.	☒ Biological Exposure Risks
Chemical contaminants	☒	The following is a list of chemicals of potential concern at the Site: • Diesel and heavy oil • Napthalenes • PAHs (including carcinogenic PAHs) • Metals in the Ground Water		☐ Chemical Exposure Risks** ** fill out table below ☐Respiratory Protection
Other contaminants	☐			
Fire	☐			
Chemical Storage	☐			
Compressed Gas	☐			
Explosives (storage)	☐			
Explosives (transport)	☐			
Nuclear Densometer	☐			Must have office Radiation Safety Plan attached and at the job Site
Other	☐			
Other Site Issues				
Landfill CQA	☐			☐Landfill CQA
Landfill Gas	☐			☐Landfill Gas Sampling
Hand and Power Tools	☐			☐Hand and Portable Power Tools
GOLDER Hired Contractors	☐			
Possible exposure to violence from general public	☐			
Cellular Phone Usage	☒	The site may have limited cell phone coverage.	Precautions should be made to ensure that communications with the home office and the project manager occur daily.	☒Cellular Telephone Use
Projectiles / Sharps	☐			
	☐			
	☐			
	☐			
	☐			

OSHA CONTAMINANT EXPOSURE INFORMATION					
Substance CAS No.	**Ionization Potential eV**	**OSHA TWA Exposure Limit**	**OSHA STEL / Ceiling Limits**	**IDLH Level**	**Target Organs**
Acenaphthene CAS No. 83-32-9	N.P	benzene soluble fraction 0.2 mg/m^3 (coal tar pitches)	None Listed	None Listed	None Listed
Benzo (a) pyrene CAS No. 50-32-8 **(Surrogate for all PAHs)**	N.P	benzene soluble fraction 0.2 mg/m^3 (coal tar pitches)	None Listed	None Listed	None Listed
Ethylbenzene CAS No. 100-41-4 **(Surrogate for diesel and heavy oil)**	8.76 eV	100 ppm (435 mg/m^3)	None Listed NIOSH STEL 125 ppm	800 ppm (10% LEL)	Eyes, skin, respiratory system, central nervous system
Naphthalene CAS No. 91-20-3	8.12 eV	10 ppm	None Listed NIOSH 15 ppm	250 ppm	Eyes, skin, central nervous system, blood, liver.
Toluene CAS No. 108-88-3 **(Surrogate for diesel and heavy oil)**	8.82 eV	OSHA 200 ppm 100 ppm* NIOSH REL 100 ppm	OSHA 300 ppm NIOSH STEL 150 ppm	500 ppm	Eyes, skin, respiratory system, central nervous system, liver, kidneys.
o, m, p, Xylenes (o) CAS No. 95-47-6 (m) CAS No. 108-38-3 (p) CAS No. 106-42-3 **(Surrogate for diesel and heavy oil)**	8.44-8.56 eV	100 ppm	150 ppm	900 ppm	Eyes, skin, respiratory system, central nervous system , GI tract, blood, liver, kidneys.

Signature of Project Manager: _____ Date: ___ / ___ / ___

This signature indicates that the above project manager is aware of the potential hazards at this site, and will communicate these hazards, and appropriate controls to Golder staff prior to their deployment on site.

PERSONAL SAFETY EQUIPMENT & TRAINING REQUIREMENT SUMMARY

Personal Protective Equipment (PPE) & Additional Equipment Required

PPP/ Equipment	Required?	Notes:
Hard Hat	Std/D	During Sampling Activities
Eye Protection	Std/D	
Steel Toe Boots	Std/D	
Hearing Protection	☒	Must be worn whenever mechanical equipment is operating.
Hi-Vis Vest	☒	
Face Protection	☐	
TYVEK Suit	☐	
Gloves	☒	Must be worn whenever sample collection is conducted.
Fall Protection	☐	
Life Preserver (PFD)	☐	
Cold Weather Gear	☐	
Self Rescuer	☐	
Dosimeter(Badge)	☐	
Headlamp	☐	
Boots (other)	☐	
Bear Spray	☐	
Air Quality Monitor	☐	
Fire Extinguisher	☒	Stored in vehicle.
First Aid Supplies	☒	
Whistle/ Air horn	☐	
Washing Facilities	☐	
Drinking Water	☒	
Additional Communication	☐	
Wheel Chocks	☐	
	☐	

Training Requirements

Training Program	Required?	Staff Requiring
Golder Health & Safety Orientation	X	All Golder Field Staff
OSHA 10-hr Construction Safety	X	All Golder Field Staff
First Aid/CPR	X	All Golder Field Staff
OSHA HAZWOPER	☒	
MSHA Part 48 - Surface	☐	
MSHA Part 48 - Underground	☐	
MSHA Part 46 - Surface	☐	
Confined Space Entry	☐	
Respirator Fit Testing	☐	
Industrial First Aid	☐	
Transport. Danger. Goods	☐	
Emergency Procedures	☐	
Boat Safety	☐	
Self Rescuer Use	☐	
Helicopter Safety	☐	
Fall Protection Training	☐	
Rescue Training	☐	
	☐	
	☐	
	☐	
	☐	

CHANGES TO THE FIELD HEALTH & SAFETY PLAN

If the conditions / hazards in the field are significantly different from those anticipated / assessed in the Potential Hazard Assessment, the Project Manager (PM) must be informed immediately. At this point the PM will decide on the appropriate course of action, and give you verbal authorization to enter this information into the **special instructions** section of this HASP. This may include a temporary work stoppage.

Action Levels:

Site workers must notify the site health and safety coordinator immediately in the event of any injury, or if signs or symptoms of overexposure to hazardous substances are exhibited. Specific hazardous substances expected at the site and action levels are identified and listed below.

Monitoring Instrument	Monitoring Frequency	Action Level/Criteria	Specific Action
PID	Continuously during well drilling activities	If the PID reading is 10 ppm (in breathing zone)[1]	Cease work and evacuate area. Upgrade to level C for emergency stabilization/ demobilization purposes only. Evaluate if mechanical ventilation is feasible. Contact PM and HSC for further options.

[1] This should be established on each site based on the contaminants present and should be set at one-half of the lowest published standard. Be careful that the PID will measure the contaminant and compensate for how well the contaminant is measured (see manufacturer data).

In summary, the following is a list of COPCs for the Site:

- Diesel and heavy oil
- Naphthalenes
- PAHs (including carcinogenic PAHs)
- Metals in the Ground Water

☒ Chemical Exposure Information included in this HASP

PROJECT SITE CONTACT FORM
(COPY MUST BE GIVEN TO THE PROJECT MANAGER OR DIRECTOR)

Project Title: Avery Landing Site Engineering Evaluation Project Number: 073-93312-02

Site Name: Potlach Avery Landing

Street Address: The Site is located along State Highway 5 about 0.75 mile west of the town of Avery, Idaho.

Employee Name: [TBD] Res. Phone: [TBD]

Pager Number: [TBD] Cell Phone: [TBD]

Project Manager: [TBD] Res. Phone: [TBD]

Site H&S Contact: [TBD]

Phone No. of H&S Contact: [TBD]

REMOTE SITES CONTACT

Departure Date: [TBD] Expected Return: [TBD]

Lodging: [TBD] Phone No: [TBD]

Emergency Notification Procedures for Key Contact Person

Within 4 hours of missed check-in time:

- Try to contact employee by radio or phone, as appropriate
- Check employee's hotel
- Call client site and request client try to locate employee
- Check with other Golder employees in the area

After a maximum of 4 hours (less time may be appropriate based on weather conditions or other factors) of failed contact:

Notify the following that the employee is "overdue".

- Office Manager
- Search & Rescue
- Client
- Other Golder employees in the area

ON SITE SAFETY BRIEFING TRACKING FORM

Meeting Type- Site Orientation or Tailgate Talk	Meeting Attendee	Initials*	Date	Topics Discussed / Concerns Brought Forward
To be completed during the project.				

***Please ensure that all workers (including other contractors) attending the safety meeting, initial the column beside their name ***